

## **ARTICLE 8. LANDSCAPING AND BUFFERS**

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## DIVISION I. GENERAL

### **Sec. 18-446. Purpose**

The landscaping and buffering standards of this section are intended to accomplish the following purposes:

- (a) Maintain visual character of the community;
- (b) Screen objectionable views within and between uses;
- (c) Define functional exterior spaces;
- (d) Reduce glare into and from the site;
- (e) Reduce dust and other pollutants suspended in the air;
- (f) Control noise and provide acoustical modification into and from the site;
- (g) Influence wind patterns and their effects upon proposed uses;
- (h) Contain odors and minimize their passage into and from the site;
- (i) Control the direction and velocity of surface water runoff;
- (j) Maintain the Integrity of the natural heritage;
- (k) Maintain indigenous species
- (l) Minimize soil erosions;
- (m) Moderate interior and exterior temperatures by controlling solar radiation, buildings and paved surfaces and air pollution;
- (n) Maintain the aesthetic quality of property and enhances its value, and
- (o) Transpire water.

### **Sec. 18-447. Applicability**

In order to meet the above functions, landscaping shall be required for the purposes of:

- (a) Buffering adjoining and competing land uses;
- (b) Landscaping parking lots with five or more parking spaces or those areas 2,500 square feet or more devoted for vehicular use;
- (c) Retaining Existing Trees in All Residential Subdivisions of more than five (5) lots, High-Density development or Planned Development; and commercial, office and institutional, and industrial developments.
- (d) Landscaping for the above three (3) types of projects shall meet the general landscaping performance standards specified in Section 18-448. Additional performance standards, as applicable, shall also be met for buffer yards (Division VII of this article) and for parking lots (Division V of this article).

### **Sec. 18-448. General Standards for Landscaping**

The following general standards shall be used in the process of designing all landscaping plans:

- (a) Selection of Plant materials - All plant materials and their spacing requirements, which are to be planted to meet the opacity and height requirements of this section shall be either selected from the "Approved Planting List," from the City Technical Standards and Specifications Manual. City Staff may consult the New Hanover County Cooperative Extension Service regarding other plant materials not in the manual.

(b) Unless otherwise noted all trees planted as a function of fulfilling the requirements of this section shall be a minimum of two (2) to two and one-half (2.5) inch caliper for shade canopy trees, eight (8) to ten (10) feet for understory and multi-trunk trees, and shrubs shall be a minimum of twelve (12) inches.

(c) Credit for Preserved Trees. Credit towards landscaping requirements may be granted by the reviewing agency for healthy trees of at least two (2) inch caliper preserved anywhere on a site. Credit may be allowed at a rate in accordance with the table below. Tree credit may be used to satisfy street yard, parking lot, or mitigation requirements provided an overall landscaped effect is maintained. Required landscaping area may also be reduced proportionately to the reduction in planting when credit is granted. Credit may not be granted for single-family residential development except for retained trees in the common areas. Credit shall not be granted for trees preserved in a required buffer yard.

<b>Preserved Trees (inches caliper or DBH)</b>	<b>Credit (required trees, pine plugs or shrubs)</b>
2 – 5	1
6 – 11	2
12 – 17	3
18 – 23	4
> 24	(DBH/6)*

(d) Regardless of credit granted, fifteen (15) trees per disturbed acre must be retained or planted on the site.

(e) Provision for other uses - Up to fifteen per cent (15%) of the area to be landscaped may be covered with surfaces specifically intended to afford intensive use and enjoyment by employees or the public (such as walking paths, bench and table pads, etc.).

(f) Adequate sight angles. All plantings shall be in accordance with Section 18-556 of this chapter.

(g) It is encouraged that stormwater management systems be integrated into the landscaping plan by employing rain gardens, bioretention units, constructed wetlands, and infiltration areas, as combined landscaping / stormwater management features.

(h) All trees and shrubs shall be locally adapted to the area. Native species and related cultivars are encouraged.

(i) Xeriscaping and use of drought tolerant landscape planning is encouraged.

(j) Plantings shall be installed in a manner that is in visual harmony with existing and surrounding vegetation and topography, and insures the availability of sufficient soil and water for healthy growth.

(k) Stormwater runoff should be directed to landscape islands and planting areas where practical to reduce irrigation needs and to take advantage of water quality and water recharge benefits.

#### **Sec. 18-449. Exemptions**

(a) Properties within the HD, HD-R, HD-MU and HD-O zoning districts shall be subject only to the requirements placed on them by the Historic Preservation Commission.

(b) Single family detached residential lots of two (2) acres or less are exempt from this section.

(c) All bona fide agricultural land use is exempt from this section.

#### **Sec. 18-450. Administration and Enforcement**

(a) Before the issuance of a building permit for the construction, renovation or alteration of any structure, a landscape plan indicating the type amount and location of any required landscaping prepared in conformance with the provision of this section shall be submitted by the property owner and shall be approved by the City Manager.

(b) No certificate of occupancy for any construction or renovations shall be approved by the zoning inspector, until

(1) The required landscaping is completed in accordance with the approved plan; or

(2) A letter of credit or certified check has been posted, which is available to the City, and in sufficient amount to assure installation of the required landscaping. The amount shall be submitted by the developer and reviewed and determined by the City Manager to be acceptable.

(3) No surety or portion thereof, as provided for in this section, shall be released by the City until all landscaping has been installed, inspected, and approved, and until all required certification of such approval has been presented to the City.

(c) The board of adjustment may modify or waive the requirements of this article, where it can be demonstrated by the property owner that the specific screening buffer or landscaped open space is not needed for the protection of surrounding residential areas because of intervening streets, roadways, drainage ways, or other factors such as natural growth of sufficient height and density to serve the same purpose as the required screening buffer. The City Manager shall review all requests for modifications or waivers of screening requirements prior to the board of adjustment review.

(d) If any requirements of this section conflict with other requirements of this ordinance, the more stringent shall apply.

#### **Sec. 18-451. through Sec. 18-455. Reserved.**

## DIVISION II. TREE PRESERVATION

Vegetation existing on a site at the time of development that is required to be retained in accordance with the following provisions shall be inventoried on a tree survey. The inventory and identification shall be performed by a qualified professional and the location of existing vegetation shall be performed and certified by a registered land surveyor, and submitted as part of the site plan review process.

### **Sec. 18-456. Protected Trees.**

The following categories of existing vegetation shall be considered protected and shall be retained as indicated:

(a) *Regulated Trees.* Hardwood trees at least eight (8) inches DBH, all conifer trees at least twelve (12) inches DBH, and all dogwoods, flowering trees, and American Hollies at least 4 inches DBH anywhere on the site shall be considered regulated and protected, and shall be preserved to the greatest extent practical and incorporated into required landscaping. If removed, they are to be mitigated with replacement trees per Section 18-460, unless otherwise exempted from mitigation in this section. The total number of replacement trees shall be determined pursuant to Section 18-460.

(b) *Significant Trees.* Hardwood trees at least twenty-four (24) inches DBH, and dogwoods, American Hollies and flowering trees at least eight (8) inches DBH, anywhere on the site shall be considered significant and protected, and must be preserved to the greatest extent practical. If they are removed, regardless of location on the site, they are to be mitigated with replacement trees in accordance with Section 18-460, unless the trees are shown to be dead, dying or severely damaged or diseased as a result of natural factors, or are otherwise exempted. The total number of replacement trees shall be pursuant to Section 18-460.

(c) *Street Yards:* Any regulated or significant trees within required street yards shall be retained and supplemented as necessary to meet the street yard planting requirements.

(d) *Buffers:* Any existing trees or shrubs within required buffers shall be retained and supplemented as necessary with other plantings, fences, or berms to meet the buffer requirements. Vines and weeds may be cleared by hand or with hand-held tools, including hand-held power tools to improve the appearance of the buffer.

### **Sec. 18-457. Retention Standards for Protected Trees.**

Protected trees may be removed only if essential site improvements, as defined in Article 15 of this code, cannot be accommodated elsewhere on the site to prevent their removal. If any of these trees are to be cleared from the site, the proposed removal must be indicated, and reasons for doing so shall be clearly stated on the tree survey, and a tree removal permit must be obtained pursuant to Division III of this article. Such factors as non-selective clearing by bulldozer is less expensive than selective clearing by chainsaw are not valid reasons for removal of protected trees.

(a) Every reasonable effort shall be made to protect and retain existing trees and shrubs not actually lying in planned roadways, drainage ways, building foundation footprints, and

construction activity areas. Applicants shall contact the reviewing agency and the reviewing agency will determine whether a meeting is required prior to site plan development to evaluate the site and tree retention opportunities. Roadways and building sites should be planned to minimize the removal of protected trees.

(b) No land disturbance is permitted on areas outside of necessary grading limit for site improvements other than necessary to tie back into the existing contours, or to meet landscaping requirements.

(c) Significant trees must be preserved inside the limits of disturbance where possible. Trees requiring removal will be mitigated pursuant to Sec. 18-460.

(d) Land clearing and construction contractors shall receive adequate instruction on tree protection requirements and methods.

(e) The following may be required or permitted by the reviewing agency to accommodate protected trees:

(1) Site sensitivity in location and designing parking, stormwater facilities, utilities, streets, and buildings in relation to existing topographic features and vegetative cover. Adjustments to the location or positioning of essential site improvements that do not compromise the intended use may be required.

(2) Reduction of parking to the minimum required per the zoning ordinance for the appropriate use.

(3) Reduction in required street yards, landscape islands, foundation plantings, or setbacks for the purpose of retaining trees.

a. Wooded sites shall be developed with careful consideration of the natural characteristics of the site. Forested areas and vegetated areas unsuitable for development shall be preserved to the greatest extent practical and set aside as conservation areas, stormwater treatment areas, or open space.

b. A minimum of fifteen (15) trees at least two (2) inch in diameter (measured six (6) inches above the ground) shall be retained or planted on the parcel for each acre or proportionate area disturbed by development.

#### **Sec. 18-458. Critical Root Zone**

(a) To preserve existing trees specified on the required landscape plan to remain on the site as a function of fulfilling purposes of this section, the critical root zone shall be protected from vehicular movement, material storage, compacting, grading, excavating, and other development related activities during construction and in the final landscape design.

(b) The Critical Root Zone (CRZ) is defined as a radius around the tree equal to one (1) foot for every one inch DBH of tree trunk and shall be protected during construction by approved tree protection fencing and practices.

(c) If the entire CRZ cannot be preserved, the disturbed area shall extend no closer to the protected tree trunk than one half (1/2) the radius of the CRZ. In no case can more than forty percent (40%) of the CRZ be disturbed.

(d) Disturbance of the CRZ will only be allowed on one side of the retained tree and only with prior approval by the appropriate reviewing agency.

(e) Prior to grading, tree roots shall be pruned using appropriate arboriculture pruning tools and practices.

(f) Disturbance other than that allowed on the approved plan, including incorrectly placed tree protection fencing, or improper root pruning, constitutes negligence and will require the owner to post an irrevocable letter of credit or other means of financial assurance approved by the reviewing agency for three years to provide for mitigation of the tree per Section 18-460 to be released if determined by the reviewing agency that the tree is not at risk of dying due to the disturbance.

#### **Sec. 18-459. Negligence**

If a tree required to be protected is destroyed, substantially damaged, or dies as a result of negligence or failure to comply with the requirements of this section on the part of any property owner and or agent of the owner, within three years after completion of construction, then replacement trees of a similar species shall be planted on the site pursuant to Section 18-460.

#### **Sec. 18-460. Mitigation**

(a) Protected trees shall be mitigated on the site using trees of equal or higher value in Table III and of the size specified in Sec. 18-448.

(b) *Significant Trees*: The total number of replacement trees shall be determined by multiplying the total DBH of the removed significant trees by two (2) times the percentage for the type of tree in Table III and dividing by three (3).

(c) *Regulated Trees*: The total number of replacement trees shall be determined for regulated trees removed by multiplying the total DBH of the removed regulated tree(s) by the percentage for the type of tree in Table III and dividing by three (3). In calculating the tree mitigation for regulated trees removed in parking areas when parking exceeds the threshold of the midpoint between the minimum and maximum parking levels, the total DBH of trees removed is multiplied by the percentage of parking in excess of the threshold times the percentage for the type of tree in Table III divided by three (3).

(d) A minimum growing area of one-hundred forty-four (144) square feet of pervious surface shall be provided for each replacement tree.

(e) Pines may be mitigated on site with long-leaf pine plugs spaced 10 ft apart at a rate of 1 plug per inch DBH of the removed tree multiplied by the percentage in Table III divided by three (3). Alternatively, up to one half of the pine plugs required for replacement may be substituted with replacement hardwoods of equal or higher value in Table III at the rate of one hardwood per pine plug required.

(f) If in the determination of the City Manager, the site cannot accommodate the required numbers of trees or pine plugs, then only the amount of trees or pine plugs which can be accommodated on the site will be replaced and the remainder of caliper inches shall be mitigated through a payment in lieu of providing on-site trees. This payment shall be made into the City Tree Improvement Fund to be used for plantings of public spaces in the general vicinity of the project. The amount of the payment shall be in accordance with the pricing standards of the respective jurisdiction.

(g) Mitigation payment in lieu will not be required if in the judgment of the reviewing agency trees are retained on the site to the maximum extent practical, and the following conditions are met:

- (1) The site has a definable street yard with canopy that exceeds the standard width made up at least in part by retained tree clusters;
  - (2) The site exceeds the buffer requirements, at least in part by retained trees, tree clusters, and vegetation;
  - (3) The site exceeds the interior parking area landscaping minimum percent coverage requirements, at least in part by retained trees and tree clusters; and
  - (4) A minimum DBH of one-hundred and seventy-five (175) inches per acre of trees of two (2) inches DBH or greater is retained on the site in natural clusters.
- (h) Any mitigation trees required as a result of the removal of Protected Tree(s) shall not be counted to meet the requirements of the street yard, buffers or interior parking requirements. These trees must be provided in addition to any tree required by this ordinance.

#### **Sec. 18-461. Exemptions to Mitigation**

- (a) Protected trees removed within the footprint of the lot coverage are exempt from mitigation, provided the total building footprint does not exceed twenty-five (25) percent of the total lot area, and provided that the applicant has demonstrated diligence in designing around trees in order to retain as many trees as practicable.
- (b) Regulated trees removed within the area of disturbance necessary for essential site improvements are exempt from mitigation, provided the applicant has demonstrated diligence in designing around trees in order to retain as many trees as practicable.

#### **Sec. 18-462. Landscaping Plans**

Landscaping plans shall be submitted before or at the time of application for the Building Permit for all development projects. These plans shall contain the following information.

- (a) Date of plan preparation
- (b) Project name and description of land use
- (c) Project owner and mailing address
- (d) A map at a scale of 1"=100' or less showing
  - (1) North arrow
  - (2) Scale
  - (3) Approximate locations, species, and critical root zones of all protected trees. Groves of protected trees that will not be disturbed may be labeled as such on the map, stating the approximate number of protected trees and species mix, without specifying data on each individual tree.
  - (4) Note on plan stating that prior to any clearing, grading, or construction activity, tree protection fencing will be installed around protected trees or groves of trees. And no construction workers, tools, materials, or vehicles are permitted within the tree protection fencing
  - (5) Locations, dimensions, and square footages of required buffer yards and parking lot landscaping.
  - (6) Details of required landscaping showing species, dimensions, and spacing of planted materials and the use and protection of existing vegetation.
  - (7) All existing and proposed utilities and if applicable, their associated easements.
  - (8) Location and square footage of structures and parking lots.



- (9) Adjacent zoning districts.
- (10) Approximate locations of all trees greater than eight (8) inch DBH within required buffers and of all areas of natural vegetation to be used as part of the buffer.
- (11) Setbacks of all structures and specifications and shielding of certain uses, as required.
- (12) Locations of any Conservation Resources associated with the parcel including any Rare and Endangered species in accordance with the North Carolina Wildlife Resources Commission.
- (13) Proposed schedule for landscaping.

**Sec. 18-463. through Sec. 18-470. Reserved.**

## **DIVISION III. TREE REMOVAL**

### **Sec. 18-471. Permits Required**

No person, directly or indirectly, shall remove any tree from public or private property without first obtaining a tree removal permit from the City Manager. A tree removal permit is required before any clearing; grading or other authorizations may be issued including soil and sedimentation control permits and building permits. An approved tree removal permit for new construction shall apply to the entire site. A tree removal permit may be either attached to the submitted site plan or the site plan may be clearly marked for either approval or denial. The City may withhold or withdraw any city-issued permits, certificates and other authorizations, including but not limited to, building permits, and certificate of occupancy, until a tree removal permit is obtained. A tree removal permit or exemption for permit must be obtained before a soil and sedimentation control permit or building permit may be issued.

### **Sec. 18-472. Procedure**

Applications for tree removal permits shall be submitted to the City Manager on forms established by the City and made available to the public. The City Manager shall review all complete applications for tree removal permits and act to grant or deny the permit in accordance with this section. In applying the provisions of this article, the applicant shall follow normal landscaping practices and may seek technical assistance from landscaping or horticulture professionals, as appropriate. The application must be accompanied by a fee, as set forth in the fee schedule, and three (3) sets of plans showing the trees proposed for removal and those trees of natural areas proposed to be saved.

### **Sec. 18-473. Waivers, Exemptions and Exceptions**

(a) The City Manager may waive the requirements of this division during an emergency such as a hurricane, tornado, windstorm, tropical storm, flood, or other act of god.

(b) If any regulated tree shall be determined to be in a hazardous condition so as to (1) immediately endanger the public health, safety, or welfare, or (2) cause an immediate disruption of public services, the City Manager may authorize removal of the tree without a written permit. Following removal, the City Manager may determine that replacement with additional trees is

necessary. In making a determination, the City Manager shall utilize such professional criteria and technical assistance as may be necessary.

**Sec. 18-474. Criteria for Permit Issuance**

Tree removal permits shall be issued upon a determination by the City Manager that the application complies with all applicable standards of this section and that any of the following conditions exist:

- (a) That essential site improvements cannot be accommodated on the site without the removal of regulated trees;
- (b) The regulated tree is dead, severely diseased, injured, or in danger of falling close to existing or proposed structures; For those regulated trees which meet or exceed the definition of "Significant" tree, their removal must be mitigated as directed in Section 18-460. If the tree is determined to have died or is significantly damaged as a result of natural disaster then no mitigation will be required unless the tree is needed to meet the minimum number required on the site.
- (c) The regulated tree is causing disruption of existing utility service or causing drainage or passage problems upon the right-of-way;
- (d) The regulated tree is posing an identifiable threat to pedestrian or vehicular safety;
- (e) The regulated tree violates state and local safety standards; or
- (f) Removal of the regulated tree is necessary to enhance or benefit the health or condition of adjacent trees or property.

**Sec. 18-475. through Sec. 18-477. Reserved.**

**DIVISION IV. STREET YARD LANDSCAPING**

(a) A street yard, as defined herein, must be provided for new construction of principal structures or for expansions to existing structures or uses whenever additional off-street parking is required. However no street yard improvements shall be required for those portions of lot frontage used for driveways constructed in accordance with City or State driveway regulations.

(b) It is intended that street yards be landscaped by meeting the requirements of either the following Minimum Standard or Creative Standard.

(1) *Minimum Standard:* For every 600 square feet of street yard area, the street yard shall contain:

- a. One Canopy/shade tree as specified in Section 18-448; or
- b. In areas where overhead power lines prohibit canopy trees in the street yard, three (3) standard understory trees may be substituted.
- c. Six shrubs, 12 inches in height at planting.

(2) *Creative standard:* To promote creative designs, street yards may consist of trees and shrubbery which cover at least fifty (50) percent of its area. All street yards shall be landscaped with a combination of live vegetation, groundcover, grass, trees, or shrubs. Vegetation to be located pursuant to this section shall be selected from the "Approved Plantings List" in the

Technical Standards and Specifications Manual. After the landscaping has been planted, the owner shall maintain the street yard to ensure that the material lives and prospers.

(3) Stormwater management systems may be allowed in required street yard areas provided the required plantings can be accommodated and the overall plan maintains an attractive landscaped effect. Protected trees may not be removed from required street yard areas specifically to accommodate stormwater facilities. Stormwater facilities installed within the street yard area shall be designed in accordance with the technical standards for “Landscape Stormwater Facilities” or an alternative wetland, bioretention, or other design approved by the City Manager.

(4) No more than fifteen (15) percent of the required street yard shall be covered with an impervious surface. This portion of the street yard may be used for walkways, fountains, walls or fences but no parking areas shall be permitted in these designated areas.

(c) If there are existing trees in the proposed street yard area, the City Manager may grant credit toward meeting tree preservation requirements, provided their caliper is at least two (2) inches or more. In addition, the City Manager may require the saving of any regulated tree in the street yard area.

(d) The Street yard is calculated by multiplying the designated street yard factor in accordance with the zoning designation of the property by the linear street frontage of the subject property minus the width of all approved driveways. The resultant square footage is required to be installed as the minimum street yard amount. The applicant may install the street yard in any configuration that provides the required amount of street yard square footage between the property line and any site improvements. The maximum and minimum widths as listed in Table 1 may not be exceeded in any portion of the street yard.

**Table 1.**

<b>ZONING DISTRICT</b>	<b>MULTIPLIER</b>	<b>MAX WIDTH</b>	<b>MIN WIDTH</b>
RB, CS, AI, LM, HM,	25	37.5	12.5
CB, NB, O&I and all MF districts	18	27	9
All non single-family uses in Residential Districts	12	18	8

(e) The applicant may choose to increase the street yard multiplier up to twenty-five (25) percent above the stated multiplier in Table 1, and receive an equivalent reduction in the building's front yard setback.

(f) For all lots of record prior to the adoption of these requirements of two (2) acres or less, if the City Manager determines that the essential site improvements cannot be accommodated under the current requirements, then the required street yard square footage may be reduced up to one-half (1/2), but in no case shall be less than one half.

(g) Street yards shall be required along all street frontages. For sites with two (2) or more street frontages only, the primary street frontage shall contain the full amount of street yard as indicated in Table 1. All secondary street frontages shall contain one half (1/2) the required square footage amount as indicated in Table 1.

(1) Street yards shall be required along all street frontages. When reviewing the development plan, the City Manager, may require buffer strips, as regulated in Division VII of this article, along the street frontage to protect adjoining land uses, particularly residential, from the impacts of more intense developments.

**Sec. 18-478. through 18-480. Reserved.**

## **DIVISION V. PARKING LOT LANDSCAPING**

### **Sec. 18-481. Interior Area Landscaping**

At least eight (8) percent of the interior area of a parking facility shall be landscaped. For purposes of this section, parking facility shall include any areas of a development devoted to pedestrian or vehicular use, including but not limited to parking areas, loading spaces, automobile sales lots, driveways and internal drive aisles. The following standards shall apply to interior parking area landscaping:

(a) All single planting islands measuring twelve (12) feet by eighteen (18) feet or having the equivalent square footage shall have at least one (1) tree. All double planting islands measuring twelve (12) feet by thirty-six (36) feet or having the equivalent square footage shall have at least two (2) trees. All larger planting islands will have additional trees in increments of one (1) tree for every additional two-hundred (200) square feet. All planting islands shall have additional ground cover or shrubbery from the approved plantings list to cover the entire landscaped island, subject to the walkway allowance as indicated below. At least seventy-five (75) percent of the trees required hereunder shall be of a shade/canopy species as defined in the approved plantings list.

(b) Interior landscaping within automobile sales lots may be distributed so that smaller understory trees are utilized toward the interior of the lot, and shade trees are placed toward the perimeter. In no case shall any merchandise from these uses be displayed within a required landscape area.

(c) Up to fifteen (15) percent of a landscaped island may be devoted to pedestrian walkways, as needed.

(d) The planting size for interior trees shall be as specified in Sec. 18-448.

(e) All plantings shall be evenly distributed throughout the parking facility.

(f) All interior plantings shall be curbed or otherwise physically protected, however curb openings may be installed to allow passage of stormwater into landscaped areas designed with depressed contours for infiltration.

(g) Consecutive parking spaces shall incorporate landscaped islands at the ends of all parking rows and within the rows, such that no parking space is located more than one hundred twenty (120) feet from a planting island or peninsula. Islands shall contain at least two hundred sixteen (216) square feet in area and be at least twelve (12) feet in width, measured from back of curb barrier to back of curb barrier. Depressions and curb cuts are encouraged for creating bioretention and infiltration areas for water quality protection and groundwater recharge.

(h) Interior landscaping requirements may be waived to allow reconfiguring of designs to retain existing trees in or adjacent to parking areas. Islands are still required at the ends of parking lanes to aid safe flow of traffic.

(i) Parking facilities landscaping for the O&I and NB Districts will include the following additional landscape requirements reflecting the amount of impervious surface which is proposed:

Impervious Surface (sq. ft.)	Required Interior Landscaping (Percent)
0 - 10,000	8
10,000 - 25,000	10
25,000 - 50,000	12
50,000 - 100,000	14
100,000+	16

#### **Sec. 18-482. Perimeter Landscaping**

(a) A landscaped yard ten (10) feet in width shall be required along any side of a parking lot abutting a separate parking lot, driveway, or residentially-zoned property. Plantings shall consist, at a minimum of one tree of the size specified in Sec. 18-448 every eighteen (18) to twenty seven (27) feet. If a buffer yard or street yard is required in accordance with the provisions of this ordinance then the ten (10) foot-width may be included as part of the buffer yard or street yard. The landscaped yard may be interrupted by driveway connections between parking lots. If adjacent parking lots are developed concurrently then both properties can install a minimum of five (5) foot yard or any multiple agreed upon in writing by the two property owners that would equal ten (10) feet of planted area between the parking lots. Adjacent lots that choose to share a double parking row split down the middle of a drive isle are exempt from this requirement.

(b) For redevelopment of nonconforming parking facilities containing five (5) to twenty-five (25) parking stalls inclusive, a perimeter landscape yard may be provided in lieu of interior landscaping, subject to the following requirements:

(1) The minimum width of such yard shall be ten (10) feet.

(2) For every forty (40) linear feet or fraction thereof, the perimeter landscape yard shall contain one (1) canopy tree or three (3) understory trees of the size specified in Sec. 18-448 and a continuous row of evergreen shrubs at least eighteen (18) inches in height.

(3) Where a perimeter landscape yard overlaps a street yard or buffer yard required elsewhere in this article, the more stringent requirements shall apply.

#### **Sec. 18-483. Parking Area Screening**

When a parking facility is within fifty (50) feet of a right-of-way, if the buffer yard provisions of this ordinance do not call for a planted buffer, a low buffer shall be incorporated into the street yard to provide protection from vehicle headlights within the parking lot. The buffer shall consist of shrubbery, a grade change or planted berm or any combination thereof that serves to shield traffic on the right-of-way from headlights within the parking lot. The buffer shall be a minimum of three (3) feet in height and five (5) feet in width and may be incorporated in a street yard, provided the street yard is fifteen (15) feet or more in width. Depressions and curb cuts shall be allowed for water quality protection

#### **Sec. 18-484. Waivers**

(a) The City Manager may waive all or part of the requirements of this division for any facility which is limited to periodic or intermittent use for vehicular parking lots for churches or recreational facilities, provided the facility is completely covered by grass or otherwise presents a landscaped effect.

(b) The City Manager may waive the requirements of this division for temporary parking lots when in their determination a waiver will not violate the purposes of this section. Any such waiver shall not exceed one year.

#### **Sec. 18-485. through Sec. 18-490. Reserved.**

### **DIVISION VI. FOUNDATION PLANTINGS**

(a) For all portions of buildings which are adjacent to parking facilities or internal drive isles, foundation plantings shall be required and located between the building's street facades and the parking or drive isle curb. The minimum standards are required; however, it is encouraged that sites exceed the minimum whenever possible. The following minimum standard shall apply:

(1) The area of the building face adjacent to the parking area or internal drive isle shall be computed and multiplied by a minimum of twelve (12) percent. The resultant total square footage shall be planted as landscaped areas of sufficient variety, height, and size, with plantings listed in the "Approved Plantings List" of the City of Wilmington Technical Standards and Specifications Manual.

(2) Exemptions from this requirements may be granted when the following circumstances exist or when any of the following conditions are proposed on the site:

- a. For those portions of buildings which have drive up services along the any side of the building. (Such examples would include but not be limited to: Pharmacies, Banks, Fast Food Restaurants, Dry Cleaners, and Photoshops.)
- b. On the rear side of a building when less than ten (10) percent of the total required parking is located in the rear of the building and the rear is not adjacent to any public right-of-way.

(3) If the requirements of this section conflict with any other requirements from other sections of this ordinance, the more stringent shall apply.

**Sec. 18-491. through Sec. 18-495. Reserved.**

## **DIVISION VII. BUFFERYARDS**

### **Sec. 18-496. Purpose**

Buffer yards are designed to protect adjoining land uses, particularly residential, from the noise, heat, dust, lights, threats to privacy, and aesthetic impacts from more intense land uses. Buffer yards shall be required along all property lines adjacent to a residential use or district, except where a reduced building setback precludes placement of a buffer yard in situations where the adjoining property contains a nonresidential use of residentially zoned property, such as a church or school. The more intense land use shall be required to provide the buffer as part of its yard requirements. The following requirements shall be met for buffer yards and the yards in which buffers are required.

### **Sec. 18-497. Location of Buffer Yards**

Buffer yards shall be required to screen any residential use from any non-residential uses or district. Buffer yards shall also be required to screen any residential use or district from any attached housing development or mobile home park or high-density development or Planned Development. However, no buffer yard will be required for high density detached lots provided lots equal or exceed five thousand (5,000) square feet.

(a) The exact location and arrangement of materials and plantings in the buffer yards will be determined based upon an analysis of site topography and sight lines from public spaces or private properties which are to be protected.

(b) Where practical, buffer strips will be designed to facilitate stormwater management objectives, including bio-retention, constructed wetlands, and infiltration except where it would result in damage or removal of existing vegetation otherwise required to be preserved.

### **Sec. 18-498. Width of Buffer Yards**

Buffer yards shall have a base width equal to at least fifty (50) percent of the required setback. In all cases the base of the buffer yard shall be equal to or greater than twenty (20) feet, except as allowed in this article. Where a utility easement occupies a portion of the buffer yard, sufficient buffer width must be provided outside the utility easement to meet the required opacity standards.

**Sec. 18-499. Site Constraints**

In the event that pre-existing conditions on an infill, re-development or expansion project within the City limits result in site constraints (i.e. small lot, drainage swale, etc) that prevent meeting the standard options for buffer yards as required in this section, the City Manager may alter the buffer yard requirements to no less than ten (10) feet with a solid eight (8)- to ten (10)-foot fence provided the spirit and intent of this section is met. Such an allowance will only be made at the request of the applicant, who shall submit a plan showing how the proposed buffer would screen the intended use. The allowance will not be granted without documenting to the satisfaction of the City Manager that constraints on the site prohibit otherwise meeting the requirements of this section.

**Sec. 18-500. Allowance for a Decrease Setback with and Increase in Buffer Width**

The setback for structures may be decreased if the base width of the buffer yard as determined by this article is increased by the same amount.

**Sec. 18-501. Uses in the Buffer**

No activities shall occur in the buffer except for maintenance of the buffer and the installation and maintenance of water, sewer, electrical and other utility systems where the installation causes minimal disturbance of existing vegetation. No buffer yard required by this section may contain any building or structure, or extension of any building or structure mechanical system. This prohibition shall apply at the time of issuance of a certificate of occupancy and at any time thereafter, and shall include but not limited to: porches, decks, patios, HVAC system components, waste containers, storage buildings or any other fixture or structure, whether temporary or permanent.

**Sec. 18-502. Uses in the Rear and Side Yards Abutting a Residential Use**

(a) The following uses shall be shielded from view from the property line of the residential use or district by means of a one hundred (100) percent opaque solid wall:

- (1) Dumpsters or other trash holding areas
- (2) Outside storage areas
- (3) Loading/unloading areas
- (4) Heating/air-conditioning units including roof mounted units.

**Sec. 18-503. Types of buffer yards**

Buffer yards shall provide approximately one hundred (100) percent opacity with plantings as specified in the approved plantings list. Buffer yards may be occupied only by natural and /or planted vegetation, berms, and fencing as specified below. For all types, however, the planted material shall be a combination of trees and shrubs.

- (a) Natural vegetation must be retained in accordance with Division II of this article.



(b) One (1) or more of the following means shall be used to supplement the natural vegetation as necessary or to provide an adequate buffer where no natural vegetation exists:

(1) *Planted buffer yards*- The planted buffer yards shall perform as “opaque screens” achieving one hundred (100) percent opacity from the ground to a height of six (6) feet, with intermittent visual obstructions from the opaque portion to a height of at least twenty (20) feet, within three (3) years of planting. Trees shall be of the size specified in Section 18-448 at planting, and should be selected from the screening tree list. Shrubs shall be a minimum of three (3) feet high at planting. To provide a variety of height and depth, at least one (1) tree on average will be planted for every thirty (30) linear feet of screen. Spacing of trees should be varied from straight lines and equidistant spacing where practical. Clustering and/or random spacing of plants and trees is encouraged to produce a natural appearance in the landscape to the extent that the planting meet the screening and opacity intent of this section. Trees should be placed and spaced to provide visual aesthetic appeal; to accommodate specific growth habits of species used; to incorporate existing trees into the screen; and clustered where appropriate to provide the maximum visual buffering protection to the adjacent use.

(2) Compliance of planted vegetation screens or natural vegetation will be determined on the basis of the average mature height and density of foliage of the subject species, or field observation of existing vegetation. The opaque portion of the screen must be opaque in all seasons of the year. At maturity, the portion of intermittent visual obstruction should not leave any completely unobstructed openings of more than ten (10) feet wide where it is providing screening of structures. The portion of intermittent visual obstructions may contain deciduous plants.

(c) Combination planted buffer yard with artificial fencing:

- (1) Artificial fencing shall be between six (6) and ten (10) feet in height
- (2) If solid artificial fencing is used two (2) rows of planted materials consisting of a combination of trees and shrubs shall be provided at a minimum height of three (3) feet at initial planting and give at least fifty (50) percent visual opacity of the fence at planting;
- (3) If permeable artificial fencing is used, two (2) rows of planted materials shall be provided which give approximately one hundred (100) percent visual opacity of the fence within three (3) years of planting.
- (4) The buffer vegetation shall be located between the fence and the common property line.

(d) Combination berm with vegetation:

- (1) An earthen berm may be used in conjunction with planted vegetation provided that the combined height of the berm and planted vegetation shall be at least six (6) feet and provide approximately one hundred (100) percent opacity within three years of planting.
- (2) The slope of the berm shall be stabilized with vegetation and no steeper than 3:1. The height of the berm shall be six (6) feet or less with a level or rounded area on top of the berm. The berm shall be constructed of compacted earth.
- (3) The berm shall be designed to prevent standing water or to impede the flow of stormwater from adjacent properties.
- (4) Any berm shall be substantially planted and covered with live vegetation. No berm shall be vegetated entirely with Turf grass or ground cover.
- (5) For berms greater than two (2) feet in height, all trees shall be planted within two vertical feet of natural grade and shall be species that have no-to-low irrigation requirements, unless on-site surface water is used for irrigation.

(6) Berms are not permitted where installation will destroy or damage trees that are required to be retained under this section, or existing trees and other vegetation that functionally meet or partially meet the buffer requirements of this section.

**Sec. 18-504. Screening for Dumpsters and Outside Storage Areas**

For any of the following uses located within the view of any adjacent property or right-of-way, a visual screen shall be required to shield the use from the view of any adjacent property or right-of-way. Screening shall be a minimum of six (6) feet in height along the front or corner side of any lot and eight (8) feet in height along any side or rear property line. Chain link fencing shall not be permitted as a screening alternative. The screening shall consist of living and non-living material as specified in this article. No screening shall be required along any side and/or rear property line that is adjacent to any manufacturing or industrial use, or when adjacent to any business which operates a towing service or whose principal use is “automotive repair”.

(a) The rear side of a building where that side abuts a street right-of-way, or any dumpster or trash receptacle storage area, or service entrances and loading docks used in connection with any business establishment.

(b) Any outside storage area for vehicles awaiting repair in connection with any automotive or towing business.

(c) Any outside storage area for any equipment used in excavation, building site preparation, or construction. No part of any equipment stored in such area may project above the screen.

(d) Any ground level mechanical equipment such as HVAC, Electrical panels and similar mechanical equipment.

**Sec. 18-505. Exceptions to Buffer Yard Requirements**

For developments located in the CBD, Central Business District or for lots of record in the HD-MU, MS-MU, and the 1945 corporate limits of the City of Wilmington: When in the determination of the City Manager or designee, conditions exist peculiar to the site that prevent the full width of the buffer from being installed, the buffer width requirements may be reduced up to and including full exemption. Applicable conditions would include but not be limited too: essential site improvements; providing for safe ingress, egress, and circulation for the site and when structures exist within the required buffer yard. In these events, the buffer yard shall only be reduced to that width which is necessary to accommodate such needs.

**Sec. 18-506. through Sec. 18-510. Reserved.**

**DIVISION VIII. LANDSCAPING FOR EXPANSIONS TO EXISTING  
PRINCIPAL STRUCTURES OR USES**

For expansions to existing principal structures or uses, the following table shall be utilized in calculating the landscaping upgrade required for the previously developed portions of the site (up to the maximum landscaping requirements of this article). All newly developed portions of the

site shall be subject to the full landscaping requirements of this article. For expansions where options are listed for street yard and parking facility landscaping, the higher option shall be utilized except where the City Manager has determined that practical difficulties in site development exist in which the lower option is preferable.

**Table II.**

<b>Expansion</b>	<b>Trees</b>	<b>Street yard</b>	<b>Interior Landscaping</b>	<b>Buffer yard</b>
10--25% increase in gross floor area or vehicular use area or 5--20 new parking spaces whichever is more restrictive.	15 per acre	1/2 the required for new construction	4 percent	Fence or 1/2 the width of the required buffer for new construction
26--50% increase in gross floor area or vehicular use area; or over 10,000 sq. ft. increase in gross floor area; or 21--50 new parking spaces whichever is more restrictive.	15 per acre	Full width <b>Or</b> 1/2 the required width for new construction	4 percent 6 percent	A Fence and 1/2 the width of the required buffer for new construction
Greater than 50% increase in gross floor area or vehicular use area; or over 20,000 sq. ft. increase in gross floor area; or more than 50 new parking spaces whichever is more restrictive.	15 per acre	Full width as required for new construction	8 percent	Full buffering as required for new construction.

(a) When subdivision of previously developed property occurs and a building permit for new construction is obtained for any newly created tract within two (2) years of the date that the final subdivision plat was approved, all parcels of the original tract shall be subject to the above provisions for expansions to existing structures or uses.

(b) For consecutive expansions occurring within a two-year period, the amount of the expansions shall be summed and the maximum landscaping requirements for the total extent of the expansions shall be provided.

(c) Notwithstanding the above requirements, expansions to existing structures or uses amounting to not more than a total increase of five hundred (500) square feet in gross floor area over a two-year period shall be exempted from meeting the street yard and parking facility landscaping requirements.

**Sec. 18-511. through Sec. 18-515. Reserved.**

## DIVISION IX. MAINTENANCE

(a) All planted and retained living material, required to meet the provisions of this section, shall be perpetually protected and maintained to professionally accepted standards by joint and several responsibility of the owner, occupant, tenant, and respective agents of the property on which the material is located. Any planted material that becomes damaged or diseased or dies, or is improperly maintained shall be replaced by the owner within sixty (60) days of the occurrence of such condition. If in the opinion of the City Manager, there are seasonal conditions which will not permit the timely replacement of the vegetation (e.g. too hot or too cool for successful replanting) this requirement may be administratively waived until a time certain such that the replanting would be safe.

(b) In addition to requirements for replacement, any person who is responsible for improper maintenance practices of trees on private or public property shall be subject to a fine of \$200 per tree. The owner of the property shall also be a responsible party if the improper practices are conducted by an employee, agent, or other person under the control or direction of the property owner. Improper maintenance practices for the purpose of this section means any of the following:

- (1) Topping a tree (cutting a significant portion of the terminal growth);
- (2) Cutting upon a tree that destroys its natural habit and pattern of growth;
- (3) Pruning that leaves stubs or results in a flush cut, or splitting of limbs;
- (4) Use of climbing spikes, nails or hooks, except for the purpose of total tree removal or as specified by the American National Standards Institute.

(c) Waivers may be made to the issuance of penalties for improper maintenance practices, provided one of the following can be shown:

(1) The improper maintenance is necessary to alleviate a dangerous condition posing an imminent threat to the public or property,

(2) Franchised utilities may obtain a permit from the City, renewable on an annual basis, authorizing the pruning of trees in a manner that may be defined herein as improper provided such pruning is necessary to prevent service interruptions.

(3) Any person may apply to the development services department for an administrative waiver from the terms of this section, provided that:

- a. The application is made before any actions for which a waiver is sought have been undertaken;
- b. There are unique and special circumstances or conditions applying to the subject tree or the property upon which it is located, that do not apply generally to other trees or properties.
- c. The waiver proposed is no more than necessary to alleviate the hardship.
- d. That the granting of the waiver will be in harmony with the general intent and purposes of this section and will not create a dangerous condition that threatens the public or property.

(d) Nonliving screening buffers shall be maintained cleaned and repaired by the owner of the property on which the buffer is located. Such buffers shall be kept free of litter and advertising.

(e) Buffers that over a period of time lose their screening functionality shall be replanted to meet the requirements of this ordinance.

**Sec. 18-516. through Sec. 18-520. Reserved.**

## DIVISION X. AUTHORITY TO TREAT OR REMOVE TREES ON PRIVATE PROPERTY

(a) The City Manager may cause or order removal of any tree or part thereof on public or private property which is in an unsafe condition, damaging to sewers or other public improvements facilities, or infested by an injurious fungus, disease, insect or other pest.

(b) The City Manager may cause or order necessary treatment for any tree on public or private property which is infested by any injurious fungus, disease, insect or other pest when he determines such action is necessary to prevent the spread of any such injurious condition or pest and to prevent danger therefrom to persons or property or to vegetation planted on adjacent property.

(c) Before exercising the authority conferred by this section, the City Manager shall order the owner or occupant of the property to take corrective action. The order shall be in writing and shall state that the action specified then must be taken within ten (10) consecutive calendar days after the order is mailed. If the condition has not been corrected or if the time specified above, City Manager may enter upon the property, perform the work necessary to correct the condition and bill the owner or occupant of the property for the actual costs incurred. The costs of such work if not paid, shall constitute a lien against the property.

(d) No foliage shall be allowed to extend from public or private property into any portion of a street right-of-way below a height of eight (8) feet above the grade of the sidewalk at the property line or if no sidewalk grade has been established the height shall be measured vertically above the center of the roadway. The City Manager may cause or order corrective action to prevent any such condition from existing.

**Table III.**

	COMMON NAME	SCIENTIFIC NAME	rating	mid point	% mitigation
CATEGORY I: MITIGATE AT 100%	<i>Flowering dogwood</i>	<i>Cornus florida</i>	90-100	95	100
	Foster's, Savannah holly	<i>Ilex x attenuata</i>	90-100	95	100
	Longleaf pine	<i>Pinus palustris</i>	90-100	95	100
	White oak	<i>Quercus alba</i>	90-100	95	100
	Live oak	<i>Quercus virginiana</i>	90-100	95	100
	Crape myrtle	<i>Lagerstroemia indica</i>	80-100	90	100
	Red maple	<i>Acer rubrum</i>	80-90	85	100
	River birch	<i>Betula nigra</i>	80-90	85	100
	Ginkgo	<i>Ginkgo biloba</i>	80-90	85	100
	Loblolly bay	<i>Gordonia lasianthus</i>	80-90	85	100
	American holly	<i>Ilex opaca</i>	80-90	85	100
	Yaupon holly	<i>Ilex vomitoria</i>	80-90	85	100
	Tulip or yellow poplar	<i>Liriodendron tulipifera</i>	80-90	85	100

	Southern magnolia	Magnolia grandiflora	80-90	85	100
	Sweetbay	Magnolia virginiana	80-90	85	100
	Blackgum	Nyssa sylvatica	80-90	85	100
	Sourwood	Oxydendrum arboreum	80-90	85	100
	Southern red oak	Quercus falcata	80-90	85	100
	Laurel oak	Quercus laurifolia	80-90	85	100
	Water oak	Quercus nigra	80-90	85	100
	Willow oak	Quercus phellos	80-90	85	100
	Swamp chestnut oak	Quercus prinus	80-90	85	100
	Shumard oak	Quercus shumardii	80-90	85	100
	Bald cypress	Taxodium distichum	80-90	85	100
	Japanese zelkova	Zelkova serrata	80-90	85	100
CATEGORY II: MITIGATE AT 75%	Amur maple	Acer ginnala	70-80	75	75
	Hickory	Carya sp.	70-80	75	75
	Pecan	Carya illinoensis	70-80	75	75
	Deodar cedar	Cedrus deodara	70-80	75	75
	Lebanon cedar	cedrus libani	70-80	75	75
	Sugarberry	Celtis laevigata	70-80	75	75
	Fringetree - <i>flowering</i>	Chionanthus sp.	70-80	75	75
	Kousa dogwood	Cornus kousa	70-80	75	75
	Loquat	Eriobotrya japonica	70-80	75	75
	Green or red ash	Fraxinus pennsylvanica	70-80	75	75
	Eastern red cedar	Juniperus virginiana	70-80	75	75
	Golden raintree	Koelreuteria paniculata	70-80	75	75
	Sweetgum	Liquidambar styraciflua	70-80	75	75
	Saucer magnolia	Magnolia x soulangiana	70-80	75	75
	London planetree	Platanus acerifolia	70-80	75	75
	Japanese (Kwansan) Cherry	Prunus serrulata	70-80	75	75
	Yoshino cherry	Prunus x yedoensis	70-80	75	75
	Sawtooth oak	Quercus acutissima	70-80	75	75
	Sassafras	Sassafras albidum	70-80	75	75
	Chinese or lacebark elm	Ulmus parvifolia	70-80	75	75
	American redbud - <i>flowering</i>	Cercis canadensis	60-80	70	75
	Hawthorn sp. - <i>flowering</i>	Crataegus sp.	60-80	70	75
	American beech	Fagus grandifolia	60-80	70	75
	Black walnut	Juglans nigra	60-80	70	75
	American sycamore	Platanus occidentalis	60-80	70	75
	Littleleaf linden	Tilia cordata	60-80	70	75
CATEGORY III: MITIGATE AT 50%	Southern sugar maple	Acer barbatum	60-70	65	50
	Trident maple	Acer Bbuengeranum	60-70	65	50
	Hedge maple	Acer campsestre	60-70	65	50
	Japanese maple	Acer palmatum	60-70	65	50
	Japanese cryptomeria	Cryptomeria japonica	60-70	65	50
	Chinafir	Cunninghamia lanceolata	60-70	65	50
	Common persimmon	Diospyros virginiana	60-70	65	50
	Franklinia	Franklinia alatamaha	60-70	65	50

	Scarlet oak	Quercus coccinea	60-70	65	50
	Post oak	Quercus stellata	60-70	65	50
	American linden	Tilia americana	60-70	65	50
	American elm	Ulmus americana	60-70	65	50
	Carolina silverbell	Halesia carolina	50-60	55	50
	Loblolly pine	Pinus taeda	50-60	55	50
	Carolina cherrylaurel	Prunus caroliniana	50-60	55	50
	Black cherry	Prunus serotina	50-60	55	50
	Pin oak	Quercus palustris	50-60	55	50
	Stewartia	Stewartia sp.	50-60	55	50
	Snowbell	Styrax sp.	50-60	55	50
CATEGORY IV: MITIGATION AT 25%	Silver maple	Acer saccharinum	40-50	45	25
	Sugar maple	Acer saccharum	40-50	45	25
	Mimosa	Albizia julibrissin	40-50	45	25
	Catalpa	Catalpa sp.	40-50	45	25
	Carolina ash	Fraxinum caroliniana	40-50	45	25
	Honeylocust	Gleditsia triacanthos	40-50	45	25
	Crabapple, apple	Malus sp.	40-50	45	25
	Mulberry	Morus sp.	40-50	45	25
	Virginia pine	Pinus virginiana	40-50	45	25
	Poplar	Populus sp.	40-50	45	25
	Chokecherry	Prunus virginiana	40-50	45	25
	Flowering pear	Pyrus calleryana	40-50	45	25
	English oak	Quercus robur	40-50	45	25
	Willow	Salix sp.	40-50	45	25
	Palms		40-50	45	25

Sec. 18-521. through Sec. 18-525. Reserved